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MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER	
			VY, HUNG T	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



### **DETAILED ACTION**

1. In response to the communications dated 12/31/2001, claims 1-28 are pending in this application.

### **Acknowledges**

2. Receipt is acknowledged of the following items from the Applicant.

Information Disclosure Statement (IDS) filed on 03/25/2002 and made of record as Paper No. 4. The references cited on the PTOL 1449 form have been considered.

### **Specification**

3. The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Claim Rejections - 35 USC § 112**

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim1, the claim fails to recite the structure of a tunable laser because the claim recites the laser, mirror and grating but the claim fail to show how the light output beam generate.

Regarding claims 6<sup>16</sup> and 25-27, the claims fail to recite the structure of a tunable laser assembly. The claim fails to recite the relation between elements in the tunable laser. Where are the detector, grating and laser in tunable laser. Further, on claim 25, the phrase "top portion", "bottom portion" renders claim indefinite because it is unclear how a cavity top portion is being transparent to energy emitted from said laser, and where is the top and bottom portion in the apparatus?

Claims 2-5, 7-24, and 28 depend from rejected claim 6, and 25-27 thereby render these dependent claims indefinite.

### **Claim Rejections - 35 USC § 102**

**5.** The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

**A person shall be entitled to a patent unless -**

**(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the**

**applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

Claims 1- 28 are rejected under 35 U. S. C. § 102 (e) as being anticipated by Vilhelmsson et al., U.S. pub No. 2002/0024979 (patent is issued).

Regarding claims 1-5, Vilhelmsson et al. discloses a tunable assembly, comprising: a laser (110); a mirror (150); and grating (130), said grating pivotably mounted between said laser and said mirror wherein movement of said grating relative to said laser varies the wavelength of energy emitted from the laser (210)(see fig 1, 2 and 3 and paragraph 028). It is inherent that the mirror (150) is a highly reflective coating because it have to reflective back to create a cavity, mirror (150) is positioned so that the energy emitted from said laser (110) and reflected from said grating (130) impinges upon said mirror (150)(See fig 1,2 and 3).

Regarding claims 6, 8-9, 16,18, and 25-26, Vilhelmsson et al. discloses a tunable assembly, a laser (310), a detector (385), and grating (330), said grating pivotably mounted adjacent said laser wherein movement of said grating relative to said laser varies the wavelength of the energy emitted from the laser (310) (See paragraph 0028), laser is a side-emitting laser (310)(See fig 1-3), it is inherent that laser is a vertical cavity surface emitting laser (210) (See fig 1-3).

Regarding claims 7, and 17 Vilhelmsson et al. discloses a tunable assembly, further comprising a mirror (150) (See fig 1-3).

Regarding claims 10-15, 19-24, Vilhelmsson et al. discloses a tunable assembly, further comprising a detector and it is inherent the detector measures absorption of energy, transmission of energy, the grating is positioned above said laser (310), said assembly additionally comprises a cavity positioned beneath said laser, said detector (385) being positioned within said cavity (See fig 1-3), additionally comprising collimating optics (120) positioned between said laser (110) and said grating (130).

Regarding claims 27-28, Vilhelmsson et al. discloses a tunable assembly comprising: a laser (310), a mirror (150), a waveguide (398), and grating (330) pivotably mounted above said laser (330), said grating cooperatively functioning with said laser (330) and said highly reflective mirror (150) transmitting energy emitted from said laser (330) to said detector (385), wherein changing the angle of said grating changes the wavelength of the energy incident upon said detector (385) (See fig 1-3), wave guide is an optical fiber (398) (See fig 3).

### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Regarding claims 1-28, are rejected under 35 U. S. C. § 102 (b) as being anticipated by Harshaw, U.S. patent No. 4,696,012.

Regarding claims 1-28, Harshaw discloses a tunable assembly comprising: a laser (34), a mirror (46), and grating (42) pivotably mounted above said laser (34), said grating cooperatively functioning with said laser (34) (See fig 2) and said highly reflective mirror (46) transmitting energy emitted from said laser (34) to said detector (76) (See fig7), wherein changing the angle of said grating changes the wavelength of the energy incident upon said detector (76) (See fig 2-7).

#### **Citation of Pertinent References**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Bourzeix et al. discloses Continuously Wavelength-Tunable Monomode Laser Source, U.S. Patent No. 6,324,193.

The patent to Algots et al. discloses Narrow Band Laser with Fine Wavelength Control, U.S. Patent No. 6,192,064.

The patent to Ashkin et al. discloses Wavelength Selective Laser Apparatus, U.S. Patent No. 3,774,121.

The patent to Jerman et al. discloses Tunable Laser With Micoractuator, U.S. Pub. No. 2001/0036206.

### Conclusion

8. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Vy whose telephone number is (703) 605-0759. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



PAUL IP  
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June 10, 2003